AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (previously presented): A method of coding an audio or speech signal using a codebook search of a codebook, comprising:

dividing said codebook into a plurality of codebook groups, where the codebook comprises a plurality of code vectors for vector quantization of a signal vector representing a set of signal values of said audio or speech signal;

simultaneously determining a plurality of optimal group code vectors, each of which corresponds to one of said plurality of codebook groups by performing a comparison of the plurality of code vectors within said codebook search to determine the optimal code vector, wherein said comparison is based on cross multiplication expression

$C_t * E_{best} >< E_t * C_{best,}$

calculated in parallel for every vector, which is based on fixed point operations performed, wherein C_t is a cross term corresponding to a t-th code vector and C_{best} is the cross term corresponding to a temporarily best code vector, and wherein E_t is a energy term corresponding to said t-th code vector and E_{best} is the energy term corresponding to said temporarily best code vector;

determining an optimal code vector of said codebook from said plurality of optimal group code vectors; and

outputting the optimal code vector,

wherein said determining of said optimal code vector among said plurality of optimal group code vectors comprises evaluating an index of each optimal group code vector uniquely identifying each optimal group code vector within said codebook,

wherein the evaluating the index comprises comparing the index of each optimal group code vector with indices of other optimal group code vectors and

wherein the comparing of the index of each optimal group code vector is different from a comparison between the group code vectors.

2. (canceled).

3. (previously presented): The method according to claim 1, wherein said vector quantization is of a shape-gain type.

4. (canceled).

5. (currently amended): The method according to claim 1, wherein said method is based on a code excited linear prediction (CELP) algorithm comprising a synthesis section, and wherein ~~elements of a matrix representing a transfer function of at least one filter of said~~

~~synthesis section, and/or~~ elements of auto-correlation matrices used within said CELP-algorithm ~~and/or further precalculation and postcalculation steps for said comparison of code vectors~~ are generated/evaluated in parallel.

6. (previously presented): The method according to claim 1, wherein said codebook comprises pulse code vectors.

7. (previously presented): A processor for coding an audio or speech signal, wherein the processor comprises:

configurable hardware with an acceleration module which performs codebook search comprising:

dividing module which divides said codebook into plurality of codebook groups, where the codebook comprises a plurality of code vectors for vector quantization of a signal vector representing a set of signal values of said audio or speech signal;

first set of determination units which simultaneously determines plurality of optimal group code vectors, where each of the plurality of optimal group code vectors corresponds to one of said plurality of codebook groups; and

second determination unit which determines said optimal code vector of said codebook from the plurality of optimal group code vectors; and

an outputting module which outputs said optimal code vector,

wherein the codebook search is performed in parallel execution,

wherein said second determination unit determining said optimal code vector among said plurality of optimal group code vectors comprises evaluating an index of each optimal group code vector uniquely identifying each optimal group code vector within said codebook,

wherein a comparison of the plurality of code vectors within said codebook search is performed to determine the optimal code vector, wherein said comparison is based on cross multiplication expression

$C_t * E_{best} >< E_t * C_{best,}$

calculated in parallel for every vector, which is based on fixed point operations, wherein C_t is a cross term corresponding to a t-th code vector and C_{best} is the cross term corresponding to a temporarily best code vector, and wherein E_t is a energy term corresponding to said t-th code vector and E_{best} is the energy term corresponding to said temporarily best code vector,

wherein the evaluating the index comprises comparing the index of each optimal group code vector with indices of other optimal group code vectors and

wherein the comparing of the index of each optimal group code vector is different from a comparison between the group code vectors.

8. (previously presented): The processor according to claim 7 further comprising means for simultaneously accessing a plurality of said signal values located in a memory.

9. (previously presented): The processor according to claim 7, wherein the processor is a standard processor further comprising calculation module wherein the standard processor performs the parallel execution of said codebook search, and wherein said codebook search is optimized regarding at least one of the calculation module of said standard processor and execution time.

10. (canceled).

11. (previously presented): A coder and a decoder, capable of performing the method according to claim 1, wherein the coder and decoder are at least one of speech and audio signal CODECs.

12. (canceled).

13. (previously presented) The processor according to claim 7, wherein the processor is a digital signal processor.

14. (canceled).

15. (previously presented): The processor according to claim 7, further comprising a plurality of calculation units, each of which determines optimal group code vectors of a respective one of the plurality of codebook groups, wherein the plurality of calculation units execute said determining simultaneously.

16. (previously presented): The method according to claim 1, wherein each codebook group comprises a number of code vectors wherein the number of code vectors is a fraction of the plurality of code vectors.

17. (previously presented): The method according to claim 1, wherein each code vector is uniquely identifiable by a unique index.

18. (previously presented): The method according to claim 17, wherein the code vectors contained in a first codebook group are mutually exclusive from the code vectors contained in a second codebook group.

19. (canceled).

20. (previously presented): The method according to claim 1, wherein said evaluating an index of each optimal group code vector ensures conformity with a linear search method.

21. (currently amended): The method according to claim 1, wherein the evaluating the index further comprises selecting a code vector with a smaller index as a result of comparing the indices of the optimal group code vectors if equality regarding the cross multiplication expression occurs in a comparison between optimal group code vectors.

22. (currently amended): The processor according to claim 7, wherein the evaluating the index further comprises selecting a code vector with a smaller index as a result of comparing the indices of the optimal group code vectors if equality regarding the cross multiplication expression occurs in a comparison between optimal group code vectors.

23. (new): The method according to claim 1, further comprising obtaining conformity with a linear search method by said comparing the index of each the optimal group code vector with the indices of the other optimal group code vectors.